AMENDMENT NO. 3 AUGUST 2015
TO
IS 10998 : 1984 SPECIFICATION FOR *BINDI* (LIQUID)

[*Page* 4, *Table* 1, *Sl No.* (v)] **—** Insert the following new requirements at the end:

Sl No.	Characteristic	Requirement	Method of Test, Ref to Annex
(1)	(2)	(3)	(4)
vi)	Heavy metals as lead (Pb), parts per million, *Max*	20	**A-7**
vii)	Arsenic (as As_2O_3), parts per million, *Max*	2	**A-8**

(*Page* 8, *clause* **A-6.2**) **—** Insert the following new clauses at the end:

'**A-7 DETERMINATION OF HEAVY METALS**

A-7.1 Outline of the Method

The colour produced with hydrogen sulphide solution is matched against that obtained with standard lead solution.

A-7.2 Apparatus

A-7.2.l *Nessler Cylinders* — 50 ml capacity.

A-7.3 Reagent

A-7.3.1 *Dilute Hydrochloric Acid* — Approximately 5 N.

A-7.3.2 *Dilute Acetic Acid* — Approximately 1 N.

A-7.3.3 *Dilute Ammonium Hydroxide* — Approximately 5 N.

A-7.3.4 *Hydrogen Sulphide Solution* — Standard.

A-7.3.5 *Standard Lead Solution* — Dissolve 1.600 g of lead nitrate in water and make up the solution to 1 000 ml. Pipette out 10 ml of the solution and dilute again to 1 000 ml with water. One millilitre of this solution contains 0.01 mg of lead (as Pb).

A-7.4 Procedure

Weigh 2.000 g of material in a crucible and heat on a hot plate and then in a muffle furnace to ignite it at 600ºC to constant mass. Add 3 ml of dilute hydrochloric acid, warm (wait till no more dissolution occurs) and make up the volume to 100 ml. Filter the solution. Transfer 25 ml of the filtrate into a Nessler's cylinder. In the second Nessler's cylinder, add 2 ml of dilute acetic acid, 1.0 ml of standard lead solution and make up the volume with water to 25 ml.

Add 10 ml of hydrogen sulphide solution to each Nessler cylinder and make up the volume with water to 50 ml. Mix and allow to stand for 10 min. Compare the colour produced in the two Nessler's cylinders. Blank determinations without samples are recommended to avoid errors arising out of reagents.

A-7.5 Results

The sample may be taken to have passed the test, if the colour developed in the sample solution is less than that of standard solution.

Price Group 1

Amendment No. 3 to IS 10998 : 1984

A-8 DETERMINATION OF ARSENIC

A-8.1 Outline of the Method

Arsenic present in a solution of the material is reduced to arsine, which is made to react with mercuric bromide paper. The stain produced is compared with a standard stain.

A-8.2 Reagents

A-8.2.1 *Mixed Acid* **—** Dilute one volume of concentrated sulphuric acid with four volumes of water. Add 10 g of sodium chloride for each 100 ml of the solution.

A-8.2.2 *Ferric Ammonium Sulphate Solution* **—** Dissolve 64 g of ferric ammonium sulphate in water containing 10 ml of mixed acid and make up to one litre.

A-8.2.3 *Concentrated Hydrochloric Acid* **—** *see* 1S 265 : 1993 'Hydrochloric acid — Specification (*fourth revision*)'.

A-8.2.4 *Stannous Chloride Solution* **—** Dissolve 80 g of stannous chloride ($SnCl_2.2H_2O$) in 100 ml of water containing 5 ml of concentrated hydrochloric acid.

A-8.3 Procedure

Carry out the test as prescribed in IS 2088 : 1983 'Methods for determination of arsenic (*second revision*)', adding into the Gutzeit bottle, 2 ml of ferric ammonium sulphate solution, 0.5 ml of stannous chloride solution and 25 ml of sample solution as prepared in **A-7.4**.

For comparison, prepare a stain using 0.001 mg of arsenic trioxide.'

(PCD 19)

Publication Unit, BIS, New Delhi, India